DEVELOPMENT OF AN ONLINE INTERVENTION FOR IMPROVING THE MENTAL HEALTH OF STUDENT ATHLETES

by

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A

Synopsis

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Certificate

I hereby declare that the short synopsis "**Development of an Online Intervention for Improving the Mental Health of Student Athletes**" being submitted in partial fulfillment of the requirement for the degree of Doctor of Philosophy in Sport Psychology under faculty of Sport Psychology of Lakshmibai National Institute of Physical Education, Gwalior during the academic year 2022- 2023. It is a bonafide record of original work carried out under the supervision of Prof. (Dr) M.K. Singh and co-supervison of Addl. Prof. (Dr) Masroor Jahan and has not been submitted in full or part to any other university or institute for a degree or diploma.

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ABSTRACT

Healthy mind is as important as a healthy body for successfully carrying out duties of one's daily life. The quality of life of human beings is curtailed by the presence of common mental disorders like anxiety, depression and sleep disorders. Athletes are symbols of glory of human endeavour and for their best performance the mental and physical aspects have to be worked in tandem. The case is the same for the student-athletes too. The student athletes have to perform academically as well as athletically in the respective places for going ahead in their professional life. So the pressure they feel during their college life is very high. Due to multifarious factors student-athletes are also fighting with mental disorders. Understanding the burden of mental health is necessary for providing them with adequate help. There is a significant shortcoming of that scenario in the Indian context. The present study will be trying to obtain a clear picture about the status of anxiety, depression and sleep disorders in the Indian student-athletes. An online-website based intervention programme will be created by combining the positive psychological techniques and cognitive behavioural therapeutic techniques. The same will be administered and the effectiveness of the programme will be discussed for understanding the possibility of translating such interventions for elite level athletes.

Keywords: Mental Health, Student-Athletes, Anxiety, Depression, Sleep Disorders, Indian Context, Online Intervention, Positive Psychology, Cognitive Behavioural Therapy (CBT), Athletic Performance, Academic Performance, Well-being, Intervention Effectiveness, Elite Athletes (as a future implication)

Chapter I

INTRODUCTION

Mental health is the general condition of a person's mind (*Definition of Mental Health*, 2023). Cambridge Dictionary defines mental health as " the condition of someone's mind and whether or not they are suffering from any mental illness" (Cambridge Dictionary, 2023). According to WHO mental health is "a state of mental well-being that enables people to cope with the stresses of life, realise their abilities, learn well and work well, and contribute to their community" (World, 2022). So mental health can be understood as an ideal working condition of mind which helps one to act effectively to the needs of the environment without succumbing to stressors. According to WHO "a mental disorder is characterised by a clinically significant disturbance in an individual's cognition, emotional regulation, or behaviour" (World, 2022). Mental health disorders can also be referred to as mental health conditions (World, 2022).

It is reported that 13 percent of the global population experiences some form of diagnosable mental disorder (Team, 2020). According to WHO in 2019 1 in 8 peoples lives with a diagnosable mental disorder. They also add that anxiety and depressive disorders were the most common among them (World, 2022). In the previous estimate of WHO in 2015 322 million people in the global population (4.4%) had depression and 264 million people (3.6%) were living with some form of anxiety disorder (WHO, 2017). These disorders are often been called to as Common Mental Disorders (CMDs). These statistics have only been exacerbated by the presence of COVID-19 pandemic (World, 2022).

Mental Health and Service Availability in India

When it comes to mental health in India According to the National Mental Health Survey, 2016 approximately 14% of India's population requires active mental health interventions

(Rana, 2021). The World Health Organization reports that 5.6 crore Indians suffer from depression and 3.8 crore from anxiety disorders. They also forecasted that India will lose $1.03 trillion (at 2010 dollar rate) in economic value due to mental health issues in the period between 2012 and 2030 (Nawab, 2022). In addition, a 35% increase in mental health disorders in India has been reported in published studies (Sagar et al., 2020). According to the Times of India, Psychiatric disorders are attributed to a two-fold increase in diseases in India, with the total disease burden rising from 2.5 per cent in 1990 to 4.7 per cent in 2017 (Nawab, 2022).

According to a study conducted by the Observer Research Foundation (ORF) in 2021, it has been found that "there is a critical lack of mental health specialists, particularly clinical psychologists, who are the initial point of contact for persons seeking care for mental health issues". The number of qualified mental health specialists such as psychiatrists, clinical psychologists, psychiatric social workers, and psychiatric nurses is far less than what is required. Besides, the Indian Psychiatric Society estimates 0.75 psychiatrists for every 100,000 inhabitants in India. Furthermore, the Ministry of Health and Family Welfare informed in the Lok Sabha in 2018 that the nation has only 898 clinical psychologists compared to a demand of 20,250, and only 1,500 psychiatric nurses compared to a demand of 30,000.

The consequence of not having mental health

The deterioration of mental health is presented with different sorts of problems. These problems can be personal, social, economic and work-related. Untreated mental health conditions can result in unnecessary disability, unemployment, substance abuse problems, relationship difficulties, inappropriate incarceration, homelessness and suicide, and poor quality of life.

Sports and games have been shown to enhance physical and mental wellness. But due to the continuous stress, pressures, burnous and different other factors athletes are also fighting with mental health disorders.

Athletes Mental Health

When it comes to athletes their primary task is to put up with their ideal performance during the competition. The disturbance and disability the athletes face during the preparation and matches compromise their performance. When it comes to athletes mental health it has been found that one in three athletes are facing diagnosable mental health disorders (Burrows et al.). One meta-analysis study conducted in 2019 found 33.6% of elite athletes and 26.4% of former athletes reported symptoms of anxiety and depression (Burrows et al.). This has been coming into the limelight by various incidents and revelations of elite athletes like Simone Biles, Naomi Osaka, Michael Phelps, Robin Uthappa, Sachin Tendulkar and Virat Kohli.

The deterioration of the mental health of athletes affects their performance very negatively. Mental illness like depression, anxiety, sleep problems, and substance use disorders restricts them to perform at their ideal level. Besides mental illness makes the athletes lose their confidence thereby underperforming at matches.

Student Athletes Mental Health

The student-athlete (can be called a college-level athlete) condition is no different from elite athletes and the extra pressure of academics make their picture more difficult. The student-athletes are presented with 2 major stressors. One is academic and the other is performing well in the playing arena (Sood & Puri, 2022). They have to perform in academics to enhance their career possibilities in terms of getting admission into better colleges/universities and better jobs after that. Besides, they also have to perform their very

best at matches and competitions to go ahead with their playing career. The other stressor stressors like personal, social, and economic stress also act in tandem with the above-mentioned in their life when compared with elite athletes who primarily focus on their athletic careers. These stressors can exert a significant impact on their mental well-being thereby making them more vulnerable to mental illnesses. Since the student-athletes are not getting any income by themselves they cannot reach out for therapy for their struggles due to the obvious financial constraints. In addition to that, the continuing classes and other work make them more vulnerable to mental health conditions.

Anxiety in Student Athletes

Anxiety is a prevalent and serious concern among college and student athletes, negatively impacting their academic and athletic performance, as well as their overall well-being. Research indicates that approximately 30% of female and 25% of male student-athletes experience anxiety. Alarmingly, only a small fraction (10%) of college athletes with known mental health issues seek professional help (News Detail, 2022).

Signs and Symptoms of Anxiety:

Anxiety in student-athletes can manifest through a variety of physical, psychological, and behavioral symptoms (NCAA.org, 2022; Rice et al., 2019):

- **Physical:** Racing heart, sweating, trembling, shortness of breath, nausea, headaches, or fatigue.
- **Psychological:** Excessive worry, nervousness, fear, panic, irritability, or difficulty concentrating.
- **Behavioral:** Avoidance of certain situations, social withdrawal, changes in sleep or appetite, or substance use.

Contributing Factors to Anxiety:

Several factors can contribute to anxiety in college athletes (Alex et al., 2020):

- **Demands and Balance:** Stress stemming from academic, social, and financial pressures, coupled with the challenges of balancing athletic commitments with other responsibilities.
- **Career Uncertainty:** Dissatisfaction or apprehension regarding their future prospects after college or retirement from sports.
- **Gender Dynamics:** Potential for increased pressure, discrimination, or harassment faced by female athletes compared to their male counterparts.
- **Age and Experience:** Younger athletes may possess less developed coping mechanisms and life experience compared to older athletes.
- **Injury Concerns:** Musculoskeletal injury or the fear of injury can hinder performance, recovery, and future career opportunities.
- **Adverse Life Events:** Recent negative experiences such as the loss of a loved one, relationship difficulties, or personal trauma.

When feelings of anxiety and fear become overwhelming and uncontrollable, significantly impairing social, occupational, and personal functioning, these states can be classified as anxiety disorders.

Depression

Depression, also known as major depressive disorder or clinical depression, is a prevalent yet serious mood disorder characterized by severe symptoms that negatively impact feelings, thoughts, and daily activities like sleeping, eating, and working (Depression, 2023). Individuals experiencing depressive disorder often exhibit persistent sadness, loss of interest,

and low self-esteem, which impairs their daily functioning.

The development of depression can be attributed to a combination of genetic, biological, environmental, and psychological factors (What Is Depression?, 2023). Specific triggers can include academic stress, athletic pressure, injury, social isolation, and inadequate coping mechanisms (Flanagan, 2019). Notably, Hearth (2022) indicates a significant prevalence of depression among college athletes, ranging from 15.6% to 21%, suggesting that approximately one in five athletes may experience depression.

Sleep-Related Issues in Student Athletes: An Indian Perspective

Sleep-related problems, encompassing alterations in sleep patterns that compromise health, safety, or quality of life, are prevalent among student-athletes. These include conditions such as insomnia, sleep apnea, restless legs syndrome, narcolepsy, and parasomnias (*Sleep Disorders – Common Types, Symptoms, Treatments | Sleep Foundation*, 2020). Research indicates that sleep disturbances are common and impactful for student-athletes, affecting their physical and mental well-being, academic achievement, and athletic performance (Brauer et al., 2019). Notably, a significant proportion (49%) of elite athletes experience sleep-related issues, leading to their categorization as 'poor sleepers' (Drew et al., 2018). This scenario is likely mirrored in student-athletes who must navigate the dual demands of academics and sports. Consequences of poor sleep in this population include an elevated risk of injury and illness due to impaired immune function and recovery (Brauer et al., 2019), diminished cognitive and motor performance affecting attention, memory, and coordination (Brauer et al., 2019), and increased psychological distress, potentially leading to stress, anxiety, and burnout (Brauer et al., 2019).

Several factors contribute to poor sleep health in student-athletes. These encompass fatigue from travel and disrupted circadian rhythms (Brauer et al., 2019), suboptimal sleep hygiene

practices (Brauer et al., 2019), substance use (Brauer et al., 2019), academic and time pressures (Brauer et al., 2019), and the use of electronic devices and social media before sleep, which can interfere with melatonin production and mental arousal (Brauer et al., 2019). Adequate and quality sleep is indispensable for student-athletes to realize their full potential in both academic and athletic domains. Consequently, addressing sleep-related problems and promoting healthy sleep habits are crucial for their overall well-being and performance. The existing stigma surrounding mental health can deter help-seeking behavior, necessitating accessible and affordable interventions tailored to this population in the Indian context, where resources for mental health care can be limited.

Therapeutic Approaches for Mental Well Well-Being

There are various therapeutic approaches that have been adopted when one's mental wellness becomes compromised. It ranges from counselling for mild daily life stressors to psychotherapy and pharmacotherapy for severe mental health conditions.

Psychotherapy

Psychotherapy is a kind of talk therapy where a qualified clinician provides evidence-based intervention for the alleviation of the mental health difficulty faced by the client. There are various types of psychotherapy based on different schools of thought such as psychodynamic, person-centred, existential, humanistic, gestalt, cognitive behavioural etc. All types have shown effectiveness on varying levels for different disorders. But for most psychological disorders Cognitive behaviour therapy is found to be suitable with evidence base.

Cognitive Behaviour Therapy (CBT)

CBT is the combination of cognitive as well as behavioural schools of thoughts understanding to manage the behavioural and mental disorders of patients. In this therapeutic

method, the maladaptive thoughts are restructured and behaviours are changed by reinforcement and punishment techniques.

Since athletics and games are professions of strength, athletes have a stigma in accessing mental health care due to fear of perceiving as weak, less sporty, and less manly. The problem-oriented stance of clinical therapies only exacerbates this. But the performance-oriented approach seems to be well acceptable for athletes since it's been widely used in athletics and games by various practitioners, coaches and Sports Psychologists.

Positive Psychology Interventions (PPI)

PPI aim to enhance well-being and optimal functioning by focusing on strengths rather than pathology, a shift initiated by Martin Seligman and Mihaly Csikszentmihalyi in 2000. Dr. Carol Kauffman (2006) defines its purpose as developing evidence-based theories and methods to improve lives. Positive psychology operates on subjective, individual, and group levels, with practices like gratitude exercises and relationship enhancement shown to increase well-being and manage depression (*Effectiveness of Positive Psychology Interventions: A Systematic Review and Meta-Analysis*, 2021; *Positive Psychology - Harvard Health*, 2023).

PPI are particularly beneficial for athletes as its emphasis on optimal functioning may reduce the stigma associated with seeking mental health support. Many performance-enhancing sports psychology interventions are rooted in positive psychology. Research indicates gratitude exercises effectively boost well-being in student-athletes (*Promoting Well-Being among Intercollegiate Student-Athletes: A Gratitude Intervention Using Positive Psychology - ProQuest*, 2023).

The World Health Organization (2019) notes that various mental health issues can be treated cost-effectively; however, a significant gap exists between those needing and receiving treatment. Low treatment coverage necessitates innovative, affordable, and accessible intervention models for both general and athletic populations. Public mental health delivery

approaches appear promising for future mental health service needs (World, 2019).

Public Health Approach Towards Mental Health

The accessing of mental health interventions like psychotherapy and counselling is time-consuming and can be costly when considering the economic situation of developing countries. Due to high cost and accessibility issues, there is a higher trend in people not accessing therapy when they need it the most.

A perfect solution for the gap between who needs treatment and who gets treatment can be effectively tackled with public health approaches. Through public approaches, one could able to provide health interventions to a larger part of society. It is very effective in the preventive, promotive and curative aspects of disorders. The public health approach is particularly effective for mental health interventions. Standardised self-help interventions can be effectively delivered through public health approaches (Hadlaczky et al., 2014; Twomey et al., 2014).

Computer Technology and Mental Health

IoT-based technologies like the internet, smartphones etc can be an aid for public health approaches towards mental health. It has been found that internet-based interventions are effective in the delivery of successful mental health interventions (Manicavasagar et al., 2014; Clarke et al., 2014; Barak et al., 2008). Examples of such interventions are moodgym (*Moodgym CBT Training Program*, 2016), and Bite Back (*BITE BACK*, 2023) which purely uses CBT and delivers the services through their websites. There have been some very well-known smartphone applications which combine both PPI and CBT for improving the well-being of the general population. Some of them are Happify (Happify: Science-Based Activities and Games, 2018), Happy Programme etc.

Justification/Rationale for the Study

Considering the need of the hour presented above the study is the first of its kind conducted to enhance the mental well-being of Indian student athletes through the use of the advancement of technology; online website. The intervention module can be accessed by the student-athletes at their convenient time period. It helps them to keep track of their sessions and remaining content. The study will be providing an opportunity for student-athletes to improve their symptoms of anxiety, depression and sleep quality and it will be a skill that they can use for life long to improve their general mental well-being as well as their athletic performance. The transfer of such skills through a discussion with their peers will make the service reach more without many hassles. This will help in the wider dissemination of mental health services which have been long time restricted due to accessibility and affordability reasons such as; lack of availability of evidence-based practices and practising clinicians, higher cost, stigma and privacy issues, etc. The PPI components will help the students to destigmatize access to services. By accessing the service in their private time and space privacy and confidentiality can be maintained at the most possible level. So the proposed study will be helping those who participated who were having mental health issues to regain their mental well-being. It has the possibility to adapt to wider dissemination if found suitable and will also lead to more research to include more disorders and components for managing more conditions, which will be helping a higher number of athletes to manage their mental health difficulties. Besides the similarity of stresses between elite athletes and student-athletes, this study has the scope to translate into delivery for the elite athletes groups.

Statement of the Problem

The student-athletes are facing mental health disorders. Depression, anxiety, and sleep related

disorders are the most common and prevalent among student athletes. But the clear present picture about the same from the Indian scenario is unavailable. Due to the stigma, student athletes have inhibition towards accessing mental health services. Besides the lack of professionals, economic restraints, time availability also restricts the access of mental health services by student athletes. Existing positive psychology methods are already being utilized through diverse channels. If the cognitive behavioural and positive psychological approaches are combined and delivered through a public health mental wellbeing approach then it will be more accessible for student athletes. To date, no such quality program has been introduced in the Indian scenario. Delivering mental health services online via websites is a positive move towards reaching a wider population effectively.

Chapter II

REVIEW OF RELATED LITERATURE

The student-athletes have to face stressors from academics as well as playing fields during their term. It significantly makes them vulnerable to mental health issues. So it is the need of the hour to understand the prevalence and remedy measures for tackling the same.

Prevalence and Cause Mental Health Issues in Elite Athletes

Foskett & Longstaff (2018) surveyed 143 elite UK athletes online, revealing that 47.8% showed signs of anxiety/depression and 26.8% met the criteria for distress. A significant link was found between gender and distress ($p = 0.003$), with career dissatisfaction being a strong predictor of both anxiety/depression (OR = 0.836, $p = 0.001$) and distress (OR = 0.849, $p = 0.003$).

Rice et al. (2016) also indicated that elite athletes are particularly vulnerable to common mental disorders (CMDs). Similarly, Gouttebarge et al. (2016) reported that 44.7% of current Dutch Olympic athletes ($n = 203$) exhibited signs of anxiety/depression, and 26.6% reported distress. This study suggested that elite athletes face a comparable risk of anxiety and depression as the general population. However, research on other mental health areas like eating disorders, substance use, stress, and coping mechanisms presents less consistent findings.

Elite athletes face a high number of unique stressors (over 600), such as competing while injured or dealing with insufficient financial resources (Arnold & Fletcher, 2012). This exposure, combined with heightened public scrutiny of their performance in the media (Kristiansen et al., 2011), contributes to their increased susceptibility to common mental

disorders (CMDs) (Gulliver et al., 2015).

Student Athlets Mental Health Picture

Student-athletes face significant mental health challenges due to the combined pressures of rigorous academic and athletic demands, requiring substantial time and physical exertion. Factors contributing to these issues in young adults include social and cultural influences like family conflict, inadequate coping mechanisms for emotions, and early substance use (Kitzrow, 2009). Common mental health problems among college athletes include depression, anxiety, eating disorders, and substance abuse (Thompson & Sherman, 2007). Student-athletes experience unique stressors such as increased academic pressure, extended playing seasons, pressure to win from coaches, and the commercial aspects of college athletics (NCAA, 2014). Social media also plays a role by exposing young adults to broader comparisons, potentially fostering vulnerability and difficulty in handling public scrutiny (Eisenberg, Lipson, & Posselt, 2016). A key barrier to mental health treatment for athletes is the perception that seeking help indicates weakness, leading them to believe they should overcome psychological challenges as they do physical ones (Putukian, 2015). Furthermore, athletes may lack developed coping skills, making responses to injury particularly difficult. Consequently, student-athletes, like other students, often underutilize campus mental health resources due to the negative stigma associated with these services (Wahto, Swift, & Whipple, 2016; Watson, 2005).

Therapeutic Approaches for Mental Health Management

Psychotherapy, defined as the psychological treatment of mental health issues and the promotion of personal growth, is an effective yet underutilized intervention (Stillman et al., 2013). While individual psychotherapy, particularly Cognitive Behavioral Therapy (CBT), is

beneficial for depression and anxiety in the general population (BUTLER et al., 2006), psycho-education and counseling are often preferred for athletes due to factors like the limited availability of qualified professionals (Ströhle, 2018). Psychotherapy can be effective with or without medication.

Positive psychology interventions (PPIs) have also proven useful for athletes. By focusing on optimal functioning, PPIs can encourage athletes to seek help without fear of stigma or judgment. Many sports psychology techniques aimed at enhancing performance are rooted in positive psychology, with studies demonstrating the effectiveness of gratitude exercises in improving well-being among student-athletes (*Promoting Well-Being among Intercollegiate Student-Athletes: A Gratitude Intervention Using Positive Psychology - ProQuest*, 2023). The widely adopted Mental Toughness program also draws from positive psychology principles (Golby & Wood, 2016).

Despite the availability of effective and relatively low-cost treatments for various mental health issues (WHO, 2019), a significant gap exists between those who need and those who receive care. Low treatment coverage rates are a concern globally (World, 2019).

Stigma is a major barrier preventing elite athletes from seeking mental health support. Athletes often fear that disclosing mental health issues will be perceived as weakness and could negatively impact their careers and endorsements (*Stigma Deterring Elite Athletes with Mental Health Issues from Seeking Help | BMJ*, 2019). Other significant obstacles include low mental health literacy, negative past experiences with seeking help, and demanding schedules. Gender stereotypes, age, nationality, and personality traits can also influence help-seeking behavior. Societal expectations, ethnicity, financial concerns, and reluctance to

discuss religious beliefs are additional factors affecting athletes' mental well-being. Addressing stigma and improving mental health literacy are crucial for this population. Coaches can play a vital role in fostering a supportive environment that encourages athletes to seek mental health treatment (*Stigma Deterring Elite Athletes with Mental Health Issues from Seeking Help | BMJ*, 2019).

Maintaining privacy and confidentiality can mitigate the stigma associated with accessing mental health services. Online therapy offers a potentially valuable solution for student-athletes, providing affordable, accessible, and evidence-based care delivered by licensed professionals while preserving their privacy.

Online Interventions for Mental Wellbeing of Student Athletes

Student-athletes who are both physically and mentally healthy are more likely to succeed academically, socially, and athletically (Van Raalte et al., 2015). However, many student-athletes do not seek necessary mental health support due to a lack of awareness and the stigma associated with mental health.

To address this, Van Raalte et al. (2015) developed an interactive, multimedia website, www.SupportForSport.org, to provide student-athletes with the knowledge and confidence needed to make effective mental health referrals. Initial studies confirmed the website's functionality and received positive feedback from athletic directors and coaches. A subsequent controlled trial with a national sample of 153 student-athletes demonstrated that using the website improved mental health referral knowledge and efficacy compared to a control group. These findings suggest that tailored online programs can positively impact student-athletes across different geographical locations and resource levels.

Beyond addressing mental distress, fostering positive mental health is crucial for the long-term success of student-athletes. This includes developing their emotions, cognition, and athletic performance. A balanced approach that focuses on both mitigating mental distress and promoting positive mental wellbeing can equip student-athletes to effectively manage the demands of sports and academics (Puri & Sood, 2018).

The stigma surrounding mental health is a significant barrier to student-athletes accessing services. Internet-based mental health service delivery by using onlin self help books, video series, or therapy delivery websites can help overcome this by offering a private and convenient way for student-athletes to seek help when needed. Providing standardized online services for mild to moderately severe cases can also reduce the workload of mental health professionals, allowing them to focus on more serious cases while ensuring quality and cost-effective treatment. Currently, there is a lack of research and implementation of such services in the country (Rice et al., 2016). This study aims to contribute to addressing this gap.

Chapter III

OBJECTIVES OF THE STUDY

1. **Primary**

- To understand the extent of mental health issues (depression, anxiety and sleep problems) in college-level athletes in the country.
- To develop a positive psychology intervention (PPI+CBT) to deal with and improve the mental health issues of athletes (self-management toolkit-offline-book & then online version)

2. **Secondary**

- Develop a public mental health delivery platform for student athletes using nowadays technological advancement.
    - Design the developed intervention to deliverable through a website platform
    - Develop an cloud internet based website for delivery (self management toolkit-website)
    - Administer the intervention to learn about its efficacy
    - Publish the insights to public for enriching and improving their life

Chapter IV

RESEARCH METHODOLOGY

Research design

The study will be using repeated measures within-subjects (pre-experimental) research design.

Experimental Group O1 X O2 O3

O : Measurement

X : treatment intervention

The tentative timeline will be:

Timeline:

Phase	Activity	Duration
1	Development of intervention	**8 weeks**
2	Integration into website	**8 weeks**
3	Pre-test; Assessment of depression, anxiety, sleep problems of student-athletes	**4 weeks**
4	Intervention period	**8 weeks**
5	Post-test; Assessment of depression, anxiety, sleep problem of student-athletes after intervention	**4 weeks**

Procedure

The study will be carried out with 5 phases according to the presented timeline. The sample will be collected from different institutions. After the pre-test the subjects that come in the range up to moderate level on anxiety, depression, and sleep problems will be selected for the intervention. They will be provided the intervention through the online; website. The progress of the exercises will be tracked by the integrated software package on the website. After successfully completing the intervention the subjects will be again tested with the same questionnaires in the post-test. After 2 months the subjects will be tested again (2nd post-test) to check if the effects of intervention are sustaining or not. The obtained results will be discussed in comparison with the literature available. On the basis the finding will be made.

Intervention:

Combination of Positive Psychological Intervention with Cognitive Behavioural Techniques

The contents and techniques will be decided by evidence-based upon detailed literature analysis.

Hypothesis

Null Hypothesis:

1. There will be no improvement on anxiety in student athletes after giving the intervention using the developed website.
2. There will be no improvement in depression in student athletes after giving the intervention using the developed website.
3. There will be no improvement in sleep in student athletes after giving the intervention using the developed website.

Operational Definition

Student-athlete: university/college level athlete (student) who participated in the inter-university competition within the last year from the date of pre-assessment

Website. In this study, the website refers to the website developed for delivering the PPI+CBT intervention.

Anxiety. In this study, anxiety refers to the feelings of fear, dread, and uneasiness that may occur as a reaction to stress that meets the requirement for a diagnosable condition as per the used questionnaire.

Depression. In this study, depression refers to a mental health condition that meets the requirement for a diagnosable condition as per the used questionnaire.

Sleep disorder. In this study sleep disorder refers to the mental health condition that meets the requirement for a diagnosable condition as per the used questionnaire.

Sample and Sampling

Population of the present research is student athletes belonging to the age group of 18 to 24. A representative sample of 50 student-athletes will be chosen by using purposive sampling. These student-athletes will be found using the screening through questionnaires.

Population

The population is the student-level athletes who study at various educational institutions/ colleges and competed in the inter-university championship conducted in the range of last year.

Inclusion criteria

- Athletes championed in university-level championships and competed in

inter-university/ college level championships

- Age 16 to 35
- Athletes diagnosed with depression (mild to moderate on inventory): suicidal and severe cases will be referred to a licensed MHP
- Athletes are currently physically healthy
- No neurodevelopmental/ neurological disorders
- No history of substance use
- Willing to receive intervention
- To have access to a communication device with access to the internet (computer, tablet, and mobile).
- To have a valid email address/ phone number.
- To have basic digital skills in the use of an operational system and internet browsing.
- Ability to understand 10th level English

Exclusion criteria

- Athletes who are injured
- Athletes who receives pharmacological treatment
- Athletes have physical or mental disorders which can influence the their mood

Instrument

Anxiety, depression, and sleep quality was assessed pre - post the intervention to determine the effectiveness of the intervention through the online website.

Anxiety:Beck Anxiety Inventory (BAI)

BAI is a clinically validated self-report measure of anxiety. It have 21 items. Internal consistency for the BAI = (Cronbach's a=0.92) and test-retest reliability (1 week) for the BAI = 0.75 (Beck, Epstein, Brown, & Steer, 1988). The BAI was moderately correlated with the

revised Hamilton Anxiety Rating Scale (.51), and mildly correlated with the Hamilton Depression Rating Scale (.25) (Beck et al., 1988).

Depression: Beck Depression Inventory

BDI II is a clinically validated self report measure for assessing the severity of depression. It consists of 21 items. BDI uses a four-point Likert scale (0–3) with scores ranging from 0 to 63. Scores above 16 are considered clinical cutoffs based on the norms by Beck et al. (1996). The scale has demonstrated sufficient reliability and validity (Osman, 2020; Lykke et al., 2008).

Sleep: Athlete Sleep Screening Questionnaire (ASSQ)

ASSQ is a clinically validated self-report measure of sleep difficulties. It consists of 21 questions.

The internal consistency (Cronbach's alpha = 0.74) and test-retest reliability ($r = 0.86$) of the ASSQ is acceptable. The ASSQ demonstrated good agreement with the SMP (Cohen's kappa = 0.84) which yielded a diagnostic sensitivity of 81%, specificity of 93%, positive predictive value of 87%, and negative predictive value of 90%. (Bender et al., 2018)

Positive mental health parameter: Mental Health Continuum Short Form (MHC-SF).

The Mental Health Continuum-Short Form (MHC-SF) is a self-reported scale to measure emotional, psychological and social well-being and conduct categorical diagnosis of positive mental health (Guo et al., 2015). It consists of 14 items. Three items were chosen (happy, interested in life, and satisfied) to represent emotional well-being, six items (one item from each of the 6 dimensions) were chosen to represent psychological well-being, and five items (one item from each of the 5 dimensions) were chosen to represent social well-being. THe MHC-SF reported to have excellent internal consistency, and discrimnant validity for both adolescents and adults. It also have good reliablity and validity on fronts (Corey L.M. Keyes,

2018).

Happiness scale: The Subjective Happiness Scale (SHS)

SHS is a tool that measures how happy or unhappy a person is. It was developed by Sonja Lyubomirsky and Heidi Lepper (*Subjective Happiness Scale | Positive Psychology Center*, 2023). It consists of four questions that ask the person to rate themselves on a scale of 1 to 7, based on how they feel in general, compared to others, and according to two descriptions of happy and unhappy people. The SHS has been used in many studies and has shown good reliability and validity (*Subjective Happiness Scale | Positive Psychology Center*, 2023).

Intervention Toolkit

- Developed by combining PPI & CBT for preventive, promotive and curative strategies and techniques that can be delivered through a website

Data Analysis

Appropriate statistical measures according to the needs will be used for testing significant difference in the means between different groups, correlation between different factors & variance measure.

- t-test
- Pearson correlation
- ANOVA etc.

(Final choosing depended upon the normality of the distribution)

Ethical Consideration

- Informed consent will be obtained from the participants prior to the study.
- Confidentiality will be strictly maintained.
- Best efforts will be made for monitoring the psychological health of the participants during the study.
- On requests by the participants, the results of the study can be provided.
- Copyright for the developed contents (writings and videos)/ website app will be adequately dealt.

Chapter V

EXPECTED OUTCOME

The study expects that there will be a significant improvement in the mental wellbeing of athletes who attended and completed the online intervention successfully.

Discussion

The improvements found are in consensus with the earlier studies which delivered mental health interventions through online. The student athletes' mental wellbeing and evidence based interventions for the same were lacking in the country. Due to that student-athletes were facing challenges to cope up with their academic as well as performance pressures and needs.

Through the study the student athletes' mental wellbeing has been improved. But the increased drop out during the study is a major concern and steps have to be taken to control the drop out of subjects from online intervention models that are going to be released for the public. A meta analysis in this respect is warranted so adding as future directions from this studies understanding.

Conclusions (Expected)

Major findings of the study

- The dropout rate/ attrition is high in the online delivery of the intervention.
- Subjects find it difficult to complete the exercise and update the same at the website.
- The internet based programme is effective for management of help seeking students athletes mental wellbeing
- PPI + CBT interventions are effective in the management of the depressive and anxiety symptoms.

Expected outcome

- Significant reduction in depression, anxiety and associated distress faced by the athletes.
- Increase in well being, happiness, life satisfaction and sleep quality.
- These two will be better aiding for the improved performance of athletes in the field they are on.

Limitations of the Study

- There are higher chances of drop out when the intervention is provided through online mediums like internet, smartphone app (Twomey et al., 2014).
- Challenges to control the performance demands such as exams, relationship and financial stressors influence on different parameters such as scores of depression, sleep and anxiety.

Delimitation

- College/university level student athletic population only.

Implications of the Study

- Conduct a study having a wider population; from all over the country, to understand student athletes' mental health status. The SMART-1 can be used for a standardised dissemination of information from an international perspective.
- Include the emergency guidlines for the students who experience psychosis, suicidal feelings in every college mental health programmes. They should also have programs in place that help student-athletes navigate their emotional health. If a college counsellor is unable to manage such cases there should be very clear protocol to refer such cases to qualified mental health professionals.
- Develop a website by the govt authorities with high speed servers and pleasing UI to

improve the mental well being of student athletes from all over the country.

- Release an easy to use application for android as well as apple users on their mobile phone.
- Promotion of the above resources through online and other various modes.
- Implement AI for the tailored delivery of required and prioritised services as per the requirement of the assessed student.
- Conduct the validity and efficacy studies from time to time and add new elements for staying upto date with the latest understanding and evidence based practices.
- Include interactive video technology on the service delivery.
- Translate the understandings obtained from student-athletes into the elite athletes.

Future Plans

- Test the final therapy modules efficacy on student athletes from all over the country; different universities.
- Test the therapy module's efficacy on the elite athletic population.
- Release the application for public; all the athletes for improving their quality of life and athletic performance
- RCT on a global level.
- Submitting to various sports and games council, associations and federations

Chapter VI

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